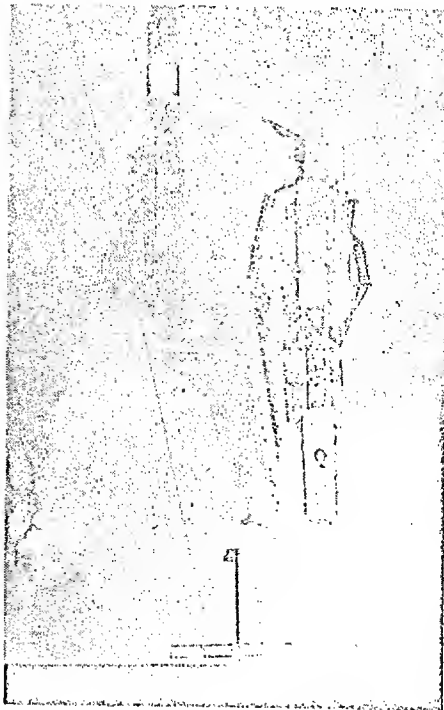


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SATELLITE LAUNCHING

ESPIONAGE

The Spies Above

If a U-2 overflight could once provoke crisis, as the Francis Gary Powers incident did in 1960, the elaborately precise spy satellite systems of the U.S. and Soviet Union a decade later have created and enforced a *de facto* "open skies" policy between the two superpowers. Today such satellites slide through space like disembodied eyes recording an astonishing variety of information. Just over a month ago, for example, the Pentagon revealed that the latest Soviet SS-9 ICBM ground tubes are exactly 20 ft. in diameter.

Neither country, naturally, is very talkative about its espionage system. But in a new book, *Secret Sentinels in Space* (Random House; \$7.95), Philip J. Klass, senior avionics editor of *Aviation Week & Space Technology*, offers a first, fascinating look at the space hardware that has, so far, contributed to global stability. By allowing the two major nuclear powers to examine one another's military installations in exact detail, the satellites have considerably diminished the danger of war through miscalculation.

Florida Force. During the 1961 Berlin crisis, the "first generation" of Discoverer satellites was aloft, and John Kennedy was able to show Soviet Foreign Minister Andrei Gromyko photographs indicating exactly how few ICBMs the Soviets really had. "I believe," says Klass, "that after Gromyko saw those pictures he persuaded Khrushchev to back down."

Similarly, Klass writes, "the President entered the Cuban missile crisis with a very precise inventory of Soviet strategic missile and bomber strength, thanks to U.S. satellite photos." At the same time, the Soviets undoubtedly used their

of U.S. aircraft in Florida and the American task force assembled in the Caribbean. "What role, if any, Russian satellite pictures played in convincing Kremlin leaders that the U.S. was prepared to go the limit," Klass writes, "probably is known only to a few Russian leaders."

The author concludes that "the automations-in-orbit, adolescent as their performance was at that stage, had kept the two giant thermonuclear powers from bombing into World War III at least once, perhaps twice." Another round of reconnaissance dueling came last year over the Middle East, when U.S. satellite pictures confirmed that



RECOVERING CAPSULE
Also for poppy fields.

the Soviets and Egyptians had moved missiles into the cease-fire zone, in violation of the cease-fire agreement.

Klass submitted proofs of his book to the CIA and the Pentagon; they objected to its publication but made no move to stop it. No one else has written in comparable detail about spy satellites. Klass describes, for example, the nation's latest SAMOS (satellite and missile observation system), "the Big Bird," launched just two months ago. A giant, twelve-ton spacecraft capable of working aloft for at least several months, the Big Bird combines the capabilities of several earlier satellites. It can transmit high-quality pictures by radio, and eject capsules of exposed film which then descend to the ground. The Big Bird also includes infra-red heat-sensing equipment that allows it to "see" through Siberian ice and snow to locate Soviet under-

tration of long-range Russian missiles, Klass reports, is behind the Urals in Central Asia and in Siberia.

Narcotics Film. Besides sniffing out weaponry, spy satellites provide a variety of data for civilian use—in geological studies, for example, or even narcotics control. Color film pictures of the poppy fields of Southeast Asia and elsewhere, taken from satellites, have been projected at the White House. When President Nixon referred recently to international control of narcotics, he had in mind the U.S. capability to point out the exact locations of the world's poppy fields.

In the past 18 months, the Soviets have moved one step ahead of the U.S. They have devised a killer satellite that can track, inspect and blow up another satellite aloft. The situation is not unlike that in the James Bond epic *You Only Live Twice*. The U.S. is still developing such a destroyer, and the possibilities are ominous. Should one side decide to knock out the other's spies, Klass concludes, "it will turn space into a battleground, precipitate a still more costly arms race and return the world to the perilous days of the late 1950s."

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